Date: Mon, 27 Sep 93 04:30:29 PDT
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>
Errors-To: Ham-Space-Errors@UCSD.Edu
Reply-To: Ham-Space@UCSD.Edu
Precedence: Bulk
Subject: Ham-Space Digest V93 #39
To: Ham-Space

Ham-Space Digest Mon, 27 Sep 93 Volume 93 : Issue 39

Today's Topics:
ANS-268 BULLETINS

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>
Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Space Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

Date: Sun, 26 Sep 1993 11:10:21 MDT
From: sdd.hp.com!vixen.cso.uiuc.edu!howland.reston.ans.net!agate!library.ucla.edu!
news.mic.ucla.edu!unixg.ubc.ca!unixg.ubc.ca!nntp.cs.ubc.ca!alberta!ugc!nebulus!
ve6mgs!usenet@network.ucsd.
Subject: ANS-268 BULLETINS
To: ham-space@ucsd.edu

SB SAT @ AMSAT $ANS-268.01
NEW RADIO AMATEUR PAYLOADS FLY!

HR AMSAT NEWS SERVICE BULLETIN 268.01 FROM AMSAT HQ
SILVER SPRING, MD SEPTEMBER 25, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-268.01

Radio Amateur Payloads Fly On ARIANE Launch 26-Sept-93 01:45:00 UTC

In what was a dramatic launch from the Kourou, French Guiana spaceport,
with launch window almost closing, an ARIANE launch vehicle lifted off in
the night to carry seven satellites to orbit. On board to give the "play-
by-play" action was the AMSAT Launch Information Network Service (ALINS)
which was on 75M with N8AJD and W5IU on 14.295 MHz. In support of othe

ALINS was WD8LAQ at WA3NAN, the radio club of the Goddard Space Flight Center. Of these seven satellites, four are of general interest to radio amateurs. The following is a brief discription of each:

POSAT-1 is a 50 kg satellite built by Surrey Satellite Tecnology Limited (SSTL) of the University of Surrey, for LNETI (Portugal). Its mission is to receive and transmit earth images, determine its position using GPS, make radiation measurements, and receive and forward messages.

POSAT-1 :
Uplink : 145.925/145.975 MHz
Downlink: 435.250/435.275 MHz (435.250 MHz is the primary frequency)
Speed : 9600 bps (38.4Kbps probably)

KITSAT-B is a 50 kg satellite built by Korean Advanced Iinstitue of Space Technology (KAIST). Its mission is to take CCD pictures, process numerical information, measure radiation, and receive and forward messages.

KITSAT-B:
Uplink : 145.870/145.980 MHz
Downlink: 435.175/436.500 MHz
Speed : 9600 baud

EYESAT-A is a 12.5 kg was built by Interferometrics (USA). Its mission is experimental monitoring of mobile industrial equipment. It also carries an amateur radio payload which has the following frequenciies:

EYESAT-A:
Uplink : 145.850 MHz
Downlink: 436.800 MHz
Speed : 300 - 9600 baud

ITAMSAT is a 12 kg satellite built by AMSAT-ITALY. Its mission is to store and forward Amateur Radio messages like AO-16, LU-19, KO-22, and KO-23. Its transponder frequencies are as follows:

Downlink:	435.867 MHz (primary)	PSK 1200 baud
	435.822 MHz (secondary)	PSK 1200 baud
		AFSK 1200 baud (FM)
		9600 baud (G3RUH)
		analog transponder (FM)

Uplink:	145.875 MHz	1200 baud Manchester / 4800 baud
	145.900 MHz	1200 baud Manchester / 4800 baud
	145.925 MHz	1200 baud Manchester / 9600 baud /exper
	145.950 MHz	1200 baud Manchester / 9600 baud

For a preliminary and "rough-cut" at the orbital elements, please insert these into your satellite tracking programs:

```
Satellite: EYESAT-A
Catalog number: 00001
Epoch time:      93269.08986300
Element set:     002
Inclination: 98.7470 deg
RA of node:       346.9000 deg
Eccentricity: 0.0010000
Arg of perigee:   216.9200 deg
Mean anomaly:     208.2700 deg
Mean motion:   14.29900139 rev/day
Decay rate:       0.00e-00 rev/day^2
Epoch rev:               2
```

Beacause all the satellites will be initially be "bunched-up" together, this element set will work for the first few days. Please allow plenty of time before the computed the AOS time to listen for these passes. As newer and more accurate elements become known, they will be published via the AMSAT News Service (ANS) bulletins. Also, please stay tuned to the AMSAT HF/VHF and look for ANS bulletins about the current status of theses new satellites.

/EX
SB SAT @ AMSAT $ANS-268.02
UO-11 STATUS REPORT

HR AMSAT NEWS SERVICE BULLETIN 268.02 FROM AMSAT HQ
SILVER SPRING, MD SEPTEMBER 25, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-268.02

G0SXY/KO5I Reports That UO-11 Is Functioning

G0SXY believe that the UO-11 anomaly was caused by two factors (1) the gradual precession of the orbit plane to a position normal to the sun vector and (2) modifications to the FORTH software magnetorquing routines.

Over the course of its 9.5 year mission, UO-11's orbit has drifted. The satellite is now in a 6 AM 6 PM sun synchronous orbit. This means that the satellite is always in sunlight. It also means that gravity gradient lock is essential for good power generation. With the sun in the orbit-normal, some other quasi-stable attitudes have particularly poor power generation. During modifications to the ancient FORTH diary operating system, an incorrect sign inversion was applied to magnetometer data; this lead to non-nominal attitude, which lead to poor power generation. Eventually, the power system started to "shed loads" starting with the transmitters and

moving to the computers. Hence the OBC 1802 and DCE NSC800 went down. Generally, one or the other of the computers is essential to being able to command UO-11, hence we were unable to command until the 2-meter beacon was automatically shut down.

Long-time UO-11 buffs will be interested to know that the spacecraft's new orbit plane makes the satellite warmer. This seems to have restored to operation an intermittant data detector circuit. It was the failure of this circuit shortly after launch in 1984 which lead to the 3-month loss of UoSAT-2.

The following is from UoSAT-OSCAR-22:

>From   : G0SYX
To   : ALL
Title   : UO-11 Status Report
Keywords : UO11
Uploader : G0SYX
Uploaded : Tue Sep 21 10:31:42 1993

UoSAT-OSCAR 11 Status Report

Controllers at the University of Suurey have been successful in regaining command of the UoSAT-2 spacecraft. The command lost timer timed out at roughly 18:37 UTC on Saturday 18 September and during the next pass over the UK controllers were able to command the spacecraft to turn on its 70 cm beacon. An examination of telemetry showed that the spacecraft is in good health.

Because both the OBC 1802 and DCE aboard UO-11 had crashed leading to the inability to issue ground commands to the spacecraft, controllers will now have to begin the process of reloading the flight software into the flight computers aboard the spacecraft. This process will take several orbits to complete. In additon, key UoSAT operational personnel are currently involved in the pre-flight preparations for the Araine V-59 launch scheduled to take place later this week. As a result the process of reloading the flight software to UO-11 will be further delayed. Every effort will be made to return UO-11 to an operational state as soon as possible.

Once the spacecraft is returned to service additional operational activities are being planned for UO-11. Watch the UO-11 bulletins for further details.

G0SYX and the other controllers at UoSAT would like to express their appreciation to all those individuals who provided telemetry and reception reports to the UoSAT command team following the disruption of UO-11 service.

Later bulletins will be issued as more details become available.

[The AMSAT News Service (ANS) would like to thank G0SYX/KO5I who is part of the UoSAT Command Team.]

/EX
SB SAT @ AMSAT $ANS-268.03
AMSAT OPS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 268.03 FROM AMSAT HQ
SILVER SPRING, MD SEPTEMBER 25, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-268.03

Current AMSAT Operations Net Schedule For AO-13

AMSAT Operations Nets are planned for the following times. Mode-B Nets are conducted on AO-13 on a downlink frequency of 145.950 MHz. If, at the start of the OPS Net, the frequency of 145.950 MHz is being used for a QSO, OPS Net enthusiasts are asked to move to the alternate frequency of 145.955 MHz.

Date	UTC	Mode	Phs	NCS	Alt NCS
2-Oct-93	1400	B	160	WA5ZIB	WJ9F
9-Oct-93	1500	B	101	W9ODI	N7NQM
23-Oct-93	1315	B	154	WB6LLO	WA5ZIB
30-Oct-93	1300	B	62	W5IU	WB6LLO

Any stations with information on current events would be most welcomed. Also, those interested in discussing technical issues or who have questions about any particular aspect of OSCAR statellite operations, are encouraged to join the OPS Nets. In the unlikely event that either the Net Control Station (NCS) or the alternate do not call on frequency, any participant is invited to act as the NCS.

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Slow Scan Television on AO-13

SSTV sessions will be held on immediately after the OPS Nets a downlink on a Mode-B downlink frequency 145.960 MHz.

/EX
SB SAT @ AMSAT $ANS-268.04
WEEKLY OSCAR STATUS REPORTS

HR AMSAT NEWS SERVICE BULLETIN 268.04 FROM AMSAT HQ
SILVER SPRING, MD SEPTEMBER 25, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-268.04

Weekly OSCAR Status Reports: 25-SEP-93

AO-13: Current Transponder Operating Schedule:
L QST *** AO-13 TRANSPONDER SCHEDULE *** 1993 Aug 25-Oct 25
Mode-B : MA 0 to MA 90 !
Mode-BS : MA 90 to MA 120 !
Mode-S : MA 120 to MA 145 !<- S transponder; B trsp. is OFF
Mode-S : MA 145 to MA 150 !<- S beacon only
Mode-BS : MA 150 to MA 180 ! Blon/Blat 180/0
Mode-B : MA 180 to MA 256 !
Omnis : MA 230 to MA 40 ! Move to attitude 210/0, Oct 25
Continuous up-to-date information about AO-13 operations is always available on the beacons at 145.812 MHz and 2400.646 MHz in CW, RTTY and 400 bps PSK. Also, these bulletins are also posted to INTERNET, ANS bulletins, Packet, PACSATs, etc., and can also be found in many international newsletters. [G3RUH/DB2OS/VK5AGR]

AO-16: Operating normally. [WH6I]

UO-22: Operating normally. [WH6I]

KO-23: Operating normally. [WH6I]

MIR: R0MIR has been pretty busy recently, since they apparently suffered solar panel damage recently in a meteor shower. They had an Extra Vehicular Activity (EVA) spacewalk, possibly two last week, and have another scheduled for Monday. Apparently, when they are preparing for EVA, they turn the radios off. They have been NOT heard on voice lately. When MIR is over the central and south the Texas area, R0MIR is on packet. In a recent chat with Sergei by N5JXS, and Sergi indicated that the EVAs that they are performing are not of an "emergency" nature, but are necessary repairs to the spacestation. Additional reports to me from N6JLH and N6WDV indicate good results on packet uploads from the West Coast, and the occasional voice contact when Alex sees who's connected. N6JLH, indicates that if you're sending private messages to the MIR crew, to keep them short, and to translate to Russian, if you can. Alex does speak pretty good English, but if it's in Russian, it's easier for him to read and answer. [N5JXS]

The AMSAT NEWS Service (ANS) is looking for volunteers to contribute weekly OSCAR status reports. If you have a favorite OSCAR which you work on a regular basis and would like to contribute to this bulletin, please send your observations to WD0HHU at his CompuServe address of 70524,2272, on

INTERNET at wd0hhu@amsat.org, or to his local packet BBS in the Denver, CO area, WD0HHU @ W0LJF.#NECO.CO.USA.NOAM. Also, if you find that the current set of orbital elements are not generating the correct AOS/LOS times at your QTH, PLEASE INCLUDE THAT INFORMATION AS WELL. The information you provide will be of value to all OSCAR enthusiasts.

/EX
SB SAT @ AMSAT $ANS-268.05
AMSAT-NA SPACE SYMPOSIUM INFO

HR AMSAT NEWS SERVICE BULLETIN 268.05FROM AMSAT HQ
SILVER SPRING, MD SEPTEMBER 25, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-268.05

AMSAT-NA Space Symposium Set For 7-11 OCT In Arlington, TX

Arrangements are being finalized for the AMSAT-NA Annual Meeting and Space Symposium '93. The proceedings are at the printers and the speakers list is full (30 Speakers!). The Saturday evening Banquet Program has now been arranged and will be very entertaining. There is still time to register. Call AMSAT Headquarters at (301)589-6062 for registration. Pre-registration deadline is 1 October. Hotel reservations can be made at (800)453-7909 or (817)640-4142. Be sure to mention you are with AMSAT.

If you are coming to the Surplus Store Tour on 7 October, please be sure to indicate this. If you are driving to Arlington and can help provide transportation for Thursday and/or Friday evening please so indicate.

This promises to be one of the best Symposiums yet so don't miss it.
See you in Arlington, TX, 7-10 October 93!

Keith Pugh, W5IU

/EX
SB SAT @ AMSAT $ANS-268.06
STATUS ABOUT POSAT-1

HR AMSAT NEWS SERVICE BULLETIN 268.06 FROM AMSAT HQ
SILVER SPRING, MD SEPTEMBER 25, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-268.06

G0/K8KA Provides Status On POSAT-1 & HEALTHSAT

HealthSat-2 and PoSAT-1 are in orbit, operating nominally. These are the

6th and 7th SSTL-built microsatellites launched on the Ariane-4 ASAP.

The SSTL command station at Guildford (Surrey, UK) commanded HealthSat-2 transmitters on at 09:10 UTC this morning. PoSAT-1 was commanded on by the SINTRA command station (Lisbon, Portugal) during the following orbit at approximately 10:50 GMT. Telemetry points indicate that both satellites are in good condition. At 12:26 GMT ground controllers commenced loading the 80C186 on-board computer with software. The initial software load comprises the SCOS multi-tasking kernaland packet radio drivers (from BekTeK) and the SSTL microsatellite file system and housekeeping integration tasks. This software will allow controllers to schedule whole-orbit data surveys and other timed events. Following this basic software load, the Attitude Determination, Control and Stabilization (ADCS) software task will be loaded and initial manoeuvers will commence. The goal of the initial ADCS operation is to place the satellite into a very slow tumble prior to deployment of the gravity-gradient boom.

PoSAT-1 is an experimental satellite carrying both non-amateur and amateur radio frequency equipment. During commissioning, PoSAT-1 is operating on its non-amateur downlink; it is hoped that amateur operations will commence after initial satellite checkout. Portugese authorities allocated the PoSAT non-amateur frequencies below the European 430-440 MHz amateur band. Although the US amateur band extends as low as 420 MHz, no interference between PoSAT and terrestrial amateur communications is expected.

HealthSat-2 is an entirely non-amateur satellite operating in the WARC-92 "Little LEO" frequency bands. The satellite is owned by the organization SatelLife which will use it for store-and-forward communications in support of medical information exchange.

SSTL extends congratulations to Interferometrices, IT-AMSAT and KAIST on their successful V-59 microsatellite launches.

Further status reports will be issued throughout the day.

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End of Ham-Space Digest V93 #39
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